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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,347	06/26/2003	Lien-Ken Lin	4006-258	3645

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EXAMINER
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BENENSON, BORIS

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/606,347	<b>Applicant(s)</b> LIN ET AL.	
	<b>Examiner</b> Boris Benenson	<b>Art Unit</b> 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.  
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-20 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1. ☒ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

***Detailed Actions***  
***Drawings***

1. The drawings are objected to because a Box 107 on Fig.2 is labeled "Reset the counter" and it is not clear what counter is reset or if it is related to both counters the label should indicate that. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office

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action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 11, 14 and 18 are objected to because of the following informalities: the language of the Claims includes "to stop said fan for a first time", "to stop work for a first time". In opinion of Examiner disclosed feature will be better characterized as *to delay restart for a first time period*.

3. Claims 1,5,11 and 18 are objected to because of the following informalities: the language of the Claims requires a step or a circuit for "stopping the fan" in beginning of claimed process method or execution of the method by apparatus, but the method and the apparatus are design to restart already stalled motor. In opinion of Examiner disclosed feature will be better described as disconnecting the motor from the power.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1, 4, 9-10, 12, 17 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language of the Claims includes a limitation that the fan is able or can "work normally". This is a very broad and indefinite limitation. A work of a fan may be characterized by "normal speed", "normal current consumption", "normal temperature of the fan motor" or by existence of stall conditions. It isn't clear if the Applicants meaning protection of the fan from all possible abnormalities. Appropriate correction is required.

5. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim includes limitations of "performing a first stopping process to stop said fan" and "performing a second stopping process to stop said fan". It isn't clear what are those processes and what is the difference between the processes. The Specification doesn't provide sufficient explanations.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-4 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pohl (4,772,019) in view of Glorioso et al. (6,301,105). Pohl disclosed a Protection Method And Systems For Refrigeration Systems SUTABLE For A Variety Of Different Models. Pohl disclosed, "In the event a locked-rotor condition is recognized whereby the motor/compressor fails to start at all, an appropriate response is to de-energize the motor/compressor, allow a delay interval to elapse, and then allow a limited-number of restart attempts. Although a restart count is thus maintained, after three consecutive minutes of operation without a fault, the restart counter can be reset" (Col.5, Lines 30-37). Such disclose indicates steps to taken in the process:

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- a. Stopping the motor (de-energize the motor),
- b. Determining whether or not a number of fan stops is equal to a set number and starting said fan when said number of fan stops is not equal to said set number and repeating steps a. and b. until number of fan stops is equal to said set number (allow a limited-number of restart attempts)
- c. Determining whether or not said fan can work normally; resetting said set number when said fan can work normally (after three consecutive minutes of operation without a fault, the restart counter can be reset)

Flow-diagram (Fig.5A, Box 530) indicates that when number in LRC (Locked Rotor Counter) if more than 6 read number of motor stops is equal to set number procedure "end and call service" read on cutting off power to the motor. Pohl disclosed use of the method and the system for controlling a motor driven load /compressor in particular/. Pohl doesn't disclose the method and system controlling a fan. Glorioso et al. teach, "The fan motor rotates about an axis to move blades that in turn cause air to flow" (Col.5, Lines 65-66). Therefore in order to control rotation of a fan a rotation of the fan motor should be controlled. It would have been obvious to one of ordinary skill in the art at the

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time the invention was made to have modified Pohl and use the teaching of Pohl to control rotation of a fan motor, because it will provide protection to the fan motor in locked conditions and prevent it from burning down even if attempts to restart it failed.

Referring to Claims 3 and 11, the apparatus includes a switch (Fig.1, Pos.34) controlled by a control system (68). The control system includes a counter (LRC) which advanced each time when locked rotor is detected to count a number of unsuccessful starts (Fig.5A, Box 526) and allow restart if the number is less than a set number of restarts or stops restart attempts if the number is greater (Box 530). The apparatus includes a time delay counter (T2) that prevents restart of the motor for 120 seconds read on stops the motor for a first time.

Referring to Claims 4 and 12, if the motor is working properly for more then 180 second the counter (LRC) is reset (Fig. 5B, Box 570).

Referring to Claims 2 and 13, Pohl disclosed a "The Fig.2 control system is microprocessor-based, and thus includes a suitable microprocessor or microcontroller 200 operating under stored program control in a matter well known to those skilled in the art. While a variety of microprocessor systems may be employed, one which is suitable is a Motorola Semiconductor Type



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No. M6805 Single-Chip N-Channel Microcontroller, which includes, within a single integrated circuit device, program ROM, RAM, a CPU and a variety of I/O line drivers" (Col.8, Lines 23-33). It is inherent that a user is able load into the microprocessor a program and setup parameters..

8. Claims 5-10 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makaran (5,744,921). Makaran disclosed a Control Circuit For Five-Phase brushless DC Motor. Makaran disclosed a protection method comprising all required steps (Fig.10 Box 430-448). Makaran didn't disclose a motor being a part of fan assembly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have use a method of Makaran in fan assembly, because it will provide an adequate protection to the fan.

Referring to Claim 6-7, Makaran disclosed use of microprocessor that includes a non-volatile memory. "Non-volatile memory 204 may also include a separate FLASH or EEPROM memory programmed during the production of motor 102 with data taking into account motor-to-motor variations and special customer requirements" (Col.7, Lines 17-21). A term "special customer requirements" obviously includes a parameters set by user.

Referring to Claim 8, Boxes 434 and 440 are representing counters for counting a first and a second stopping numbers.

Referring to Claim 10, box 432 is analyzing if motor is normally working or stalled. If the motor is working properly it will not be disabled in box 434.

9. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pohl (4,772,019) in view of Makaran (5,744,921). Pohl disclosed all the limitation of Claim 11 as it were discussed above. Pohl didn't disclose a second counter connected to the first counter. Makaran teaches the second counter that counts all restarts and therefore restarts with a first time delays and in the same time enable to provide different time delay after predetermine number of restarts. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Pohl with teachings of Makaran and use a second counter, because it will enable provide complete count and setup different time delay after predetermine number of restarts.

10. Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Makaran (5,744,921) in view of Pohl (4,772,019). Makaran disclosed all the limitation of Claim 20, as it was discussed above. Makaran didn't disclose reset of counters it control circuit detects that the motor functioned

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properly. Pohl teaches to reset the counters if it was established that the motor is working properly for at least 180 second. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Makaran with teachings of Pohl and reset counters upon detection that the motor is working properly, because it will enable the control system properly execute stall detection-reset algorithm if stall condition will appear in a future time.

### **Contact information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Benenson whose telephone number is (571) 272-2048. The examiner can normally be reached on M-F (8:20-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 ext 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

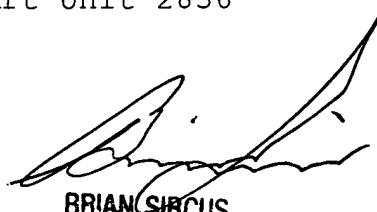
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Boris Benenson  
Examiner  
Art Unit 2836

B.B.



**BRIAN CIRCUS**  
**SUPERVISORY PATENT EXAMINER**  
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